REMARKS/ARGUMENTS

This is a response to the Office Action dated 07 September 2005. Applicants are submitting a Petition for Revival of an Application for Patent Abandoned Unintentionally under 37 CFR 1.137(b) with this amendment and arguments.

Claims 96-97 and 99-107 are currently pending in the present application. Claims 1-95 and 98 have been cancelled. Claims 96 and 97 are independent claims. Claims 99-107 are multiple dependent claims dependent upon Claims 96 and 97. Claims 96-97 and 99-107 are rejected under 35 USC §103(a). In view of the following remarks and amendments, Applicants respectfully submit that all pending claims are now in condition for allowance.

1. 35 U.S.C. §103(a)

Claims 96-97 and 99-107 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over June et al. (U.S. Pat. 6,352,694) AND/OR June et al. (U.S. Pat. 6,905,680) in view of Chang et al. (U.S. Pat. 6,129,916) and newly added Kwon et al. (U.S. Pat. 6,569,997 vice 5,569,997) and Alloway et al. (U.S. 2004/0086528 A1).

Response

June et al. (U.S. Pat. 6,352,694) AND/OR June et al. (U.S. Pat. 6,905,680) in view of Chang et al. (U.S. Pat. 6,129,916) and newly added Kwon et al. (U.S. Pat. 5,569,997) and Alloway et al. (U.S. 2004/0086528 A1) fail to establish a prima facie case of obviousness under 35 USC 103(a) because the references as a whole do not teach each and every element of Independent Claims 96 and 97. Thus, Independent Claims 96 and 97 are allowable as well as dependent claims 99-107.

Independent Claim 96 is drawn to an *ex vivo* method for down-regulating CCR5 expression in a T cell comprising contacting the T cell with a single bead comprising both an anti-CD28 antibody or antigen binding fragments and an anti-CD3 antibody or antigen binding fragments immobilized on said bead; and measuring the level of CCR5 RNA or protein expression in said contacted T cell.

Independent Claim 97 is drawn to a method for down-regulating CCR5 RNA protein expression in a T cell, comprising contacting the T cell *in vivo* with a single bead comprising both an anti-CD28 antibody or antigen binding fragments and an anti-CD3 antibody or antigen binding fragments immobilized on the same bead; and measuring the level of CCR5 RNA protein expression in said contacted T cell. Claim 99-107 are multiple dependent claims of Claims 96 and 97.

The Office Action alleges that the combination of the primary references, June ('694 patent), June ('680 patent), in view of Chang, Kwon and Allaway teach the beneficial effects of contacting T cells with anti-CD3 and anti-CD28 antibodies to increase HIV resistance and that the beneficial effect was a result of down regulation of CCR5. Thus one of skill in the art would have been motivated to combine the teachings of the references in order to induce an HIV resistant state and to monitor the expression of CCR5 expression as a result of the effect of combining anti-CD3 and anti-CD28 antibodies on T cell populations on HIV expression. It is also alleged that the prior art teaches the co-immobilization of anti-CD3 and anti-CD28 on the same bead as a means of stimulating T cells.

*June et al. ('694 patent), June et al. ('680 patent) **is not available** as prior art.*

Applicants contend that June et al. ('694 patent), June et al. ('680 patent) shall not preclude patentability of the claimed invention under 103(c) because 1) they only qualify as prior

art under subsection 102(c), and 2) the claimed invention, at the time it was made, was owned by the same person or subject to an obligation of assignment to the same person. MPEP 2141.01(IV).

The '694 and '680 June patents were both filed prior to the effective filing date of the current application (02/20/98), on 03/10/95 and 01/26/96, respectively. The '694 June patent was issued on 03/05/2002 and the '680 June patent was published on 08/22/02. Therefore, the'694 and '680 June patents can only qualify as prior art under 35 USC 102(e). In addition, both patents, at the time of the invention was made, were subject to an obligation of assignment to Genetics Institute, Inc., the Regents of University of Michigan and the United States of America as represented by the Secretary of the Navy. The assignments were later executed and recorded with the USPTO. See attached patent assignment abstract of title for each patent. Therefore, the applicants contend that the '694 June patent and '680 are not prior art under 35 USC 103(c).

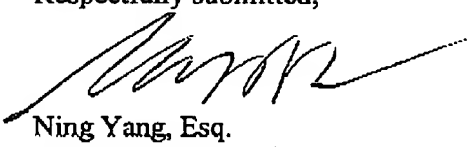
Chang, Kwon and Allaway as prior art

The remaining combination of Chang, Kwon and Allaway, singly or in combination fails to teach the use of anti-CD3 and anti-CD28 co-immobilized on a microbead, as taught in the claimed method, in order to induce an HIV-resistant state. Furthermore, the references, alone or in combination do not teach the monitoring of HIV resistance, following stimulation using the claimed method by measuring CCR5. None of the references, singly or in combination, teach the critical nature of using beads verses other solid surfaces. Also, none of the references, singly or in combination teach the critical element taught in the claimed method of co-immobilizing both anti-CD3 and anti-CD28 on the same bead. Rather, the references merely provide an

impetus to further explore how to obtain efficient induction of HIV resistance. Creson, et al. (J. Virol., vol 73 (11): 9337-9347) provides evidence that one of ordinary skill in the art would not have appreciated the difference in HIV resistance between a method using anti-CD28 immobilized on a bead verses other methods such as those where anti-CD28 is immobilized to other solid surfaces. This knowledge was only obtained after significant experimentation and study.

In view of the amendment to the claims and the above stated arguments, Applicants contend the case is now in condition for allowance. An early and favorable reply is requested.

Respectfully submitted,



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Date: March 21, 2008